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ABSTRACT

Practical or "tacit" knowledge has been argued to be critical for managerial success. Mentoring may be one way in which tacit knowledge is learned. This study examined the relationships of tacit knowledge, mentoring, gender, and competence. Subjects were managers (N=57) in a southern city. No significant gender differences were found on any of the tacit knowledge measures, although men did score slightly higher than women. The only significant correlation for the entire sample was the number of times married, with those married fewer times scoring higher on tacit knowledge. This suggests that the general skills necessary to maintain a long-term marriage are related to those necessary for managerial success. Someone who felt competent on the job and was more interpersonally competent was more likely to mentor than others. Older women were less satisfied with their jobs than were younger women. Women with higher grade point averages had been married more times, while men with higher grade point averages had been married fewer times. Mentoring experiences did not appear to affect tacit knowledge. The processes involved in mentoring relationships may be especially complex for women. (ABL)

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GENDER, MENTORING, AND TACIT KNOWLEDGE

by

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Wagner and Sternberg (1985, 1986) argue that practical or "tacit" intelligence is critical for managerial success. Although a certain level of academic intelligence is necessary, Wagner and Sternberg believe practical intelligence is far more important. They developed a test of business tacit knowledge which, when they administered to business managers, business graduate students, and undergraduates, yielded significant differences corresponding to level of business expertise. In a follow-up study of 29 bank managers, tacit test scores correlated with measures of managerial success, but only weakly with traditional IQ measures, supporting the belief that practical intelligence is a different type of intelligence altogether. Their test consists of scenarios in which a manager is asked to rate the importance of various actions toward accomplishing goals such as gaining a promotion or shaping up a mediocre department rapidly. The actions include such alternatives as getting rid of deadwood, writing an article for the company newsletter, joining an exclusive country club, or being the first to volunteer. They identified four subscales: Managing Self, Managing Others, Managing Career, and a fourth subscale ("Other") which contains items yielding significant correlations with the criterion variables.

We have been working in the area of mentoring relationships and believe that mentoring may be one way in which tacit knowledge is learned. This study is a replication and extension of Wagner and Sternberg that includes information about mentoring experiences and evaluates several hypotheses:

1. Mentoring relationships promote tacit knowledge acquisition.
2. Higher levels of tacit knowledge will be related to higher satisfaction and perceived competency. (Mentoring has been shown to be associated with higher levels of job satisfaction and perceived competency, Burke, 1984; Riley & Wrench, 1985.)
3. Social class affects acquisition of tacit knowledge (contrary to Wagner and Sternberg's view).
4. Women managers score lower on tacit knowledge measures. (Women's lack of success at higher levels of business is often attributed to less understanding of how the system works. Wagner and Sternberg do not report the gender of their subjects, but it can be assumed that they were predominantly male.)
5. Similarly to men, women with more tacit knowledge enjoy more career success than women with lower levels of tacit knowledge.

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Because of the dual stresses of marriage and career on professional women, we included information on marital history. Marriage is also relevant to the question of whether tacit knowledge is general or domain-specific knowledge. Domain-specific knowledge, such as the chess-specific knowledge of the chess

master, does not generalize to other domains. If the tacit knowledge test reflects a general coping style or general emotional stability, then we might suspect that people who are successful in marriage will also be successful in their careers. If managerial tacit knowledge is domain-specific, however, there should be no relationship. We had no predictions about the relationship between marriage, career, and tacit knowledge.

METHOD

Subjects and Materials

Subjects consisted of 500 male and 500 female executives in a large Southern city. The subjects were drawn from a directory of local executives and represented a variety of companies and industries.

The first part of the questionnaire contained the Wagner/Sternberg business tacit knowledge test, consisting of 12 work-related situations, each of which has 9 to 20 response items, for a total of 166 items. Subjects rated the importance of each response item on a 7 point scale. Subjects were asked whether they had had a mentor, if so, how many, whether the mentorship was currently occurring, the length of the main mentoring relationship, the extent to which the relationship influenced their career and their personal development, whether they had mentored others, and if so, how many. Subjects were asked to rate on a nine point scale how competent they felt making decisions in their present job, how competent they felt in their ability to interact successfully with others in their work environment, the degree of satisfaction with their present job and with their overall career success. They were then asked their age, sex, total compensation for the last year, current marital status, times married, parents' educations and occupations, and their educational history, including college major and grade point average.

RESULTS AND DISCUSSION

Basic Analyses

Return rates were very low: 57 managers (33 males, 22 females, and 2 unidentified with regard to gender) returned questionnaires. The Wagner and Sternberg test is quite difficult and long. Our sample then contains subjects who were highly motivated and may characterize only a portion of managers. Descriptive statistics are given in Table 1 for the sample.

Table 1

Basic Statistics for Subjects

Variables	Mean	Sample SD	Sample Range
Age	40.6	10.8	22-63
Income	$40-50,000	26,000	20-100,000
Years past HS.	3	2.5	11th-doctorate
College GPA	2.97	4.6	2.0-4.0
Father's ed	11th grade	3.5	6th-doctorate
Mother's ed	11th grade	3.2	6th-masters

Women made significantly less money, $F(1, 51) = 9.11$, $p=.004$, reported significantly lower job satisfaction, $F(1, 53) = 4.24$, $p=.044$, and had significantly higher GPAs, $F(1, 32) = 13.82$, $p=.001$. Wagner and Sternberg's subjects and our male subjects had mean incomes in the $50,00 to $60,000 range. Wagner and Sternberg's subjects averaged 4.5 years beyond high school and were hence a little better educated than our subjects. Sixty two percent of men and 55% of women had been proteges. Sixty two percent of men and 78% of women had mentored others. In other words, women were slightly less likely to be mentored, but somewhat more likely to mentor others. These proportions probably do not represent the proportion of proteges or mentors in the general population since those who had been in mentoring relationships may have been more likely to complete the questionnaire.

Tacit Knowledge Results

The tacit knowledge scores, shown in Table 2, are somewhat lower than those of Wagner and Sternberg's subjects which are shown in the first column in bold for comparison purposes.

Table 2.

Descriptive Statistics for Managers compared to Wagner and Sternberg

Variable	**W&S Mean**	Mean	SD	Range
Tacit Knowledge	**171.9**	158.3	24.9	51-216
Managing				
Self	**70.2**	64.0	9.5	22-81
Others	**20.8**	17.4	4.7	6-30
Career	**63.6**	61.7	13.2	7-91
Other	**16.5**	15.3	3.8	3-22

Contrary to expectations, there were no significant gender differences on any of the tacit knowledge measures, although men did score slightly higher (total scores equalled 161.2 versus 154.9 for women). While Wagner and Sternberg reported that the scales are relatively independent of each other, we found all the intercorrelations to be statistically significant. Interestingly, the scales were much more highly intercorrelated for women than for men. For men, the only significant correlation was between Managing Career and Managing Others (r = .607). Wagner and Sternberg also report this as the only significant correlation for their business manager subjects.

Correlations with criterion measures

The only significant correlation for the entire sample is with Times Married: those married fewer times score higher on tacit knowledge. (The 2 unmarried Ss were excluded.) This suggests that those general skills necessary to maintain a long-term marriage are related to those necessary for managerial success. Women and men differ significantly in how GPA, income, and father's education relate to tacit knowledge scores. Women have as much tacit knowledge as men, but it does not result in more career success as measured by income. Social class may play a differential role for men and women: Women with more educated fathers acquire higher levels of tacit knowledge. The opposite is true for men. The inverse relationship between numbers of marriages and tacit knowledge is much stronger for women than for men. This finding, coupled with the fact that for women the subscales are more closely interrelated, suggests that tacit knowledge may be more generalized for women. That is, for men, managing self, others, and career seem to be distinct skills. Table 3 presents the data broken down by gender.

Table 3
Correlations between tacit knowledge and criterion measures by sex.

Criterion reference measure	Tacit Knowledge Score: Total Men	Women
Years education	-.120	-.098
College GPA[a]	**.473*(21)[b]**	**-.760**(13)**
Income	**.278**	**-.299**
Father's education	**-.276**	**.331**
Mother's education	.138	-.022
Age	-.118	-.031
# marriages	-.214	-.624**
Having been mentored	.094	.197
Length of mentorship	.307(17)	-.092(12)
Job satisfaction	.247	.093

*p<.05.
**p<.01.
[a]Boldface indicates variables on which the correlations differ significantly for men and women.
[b]When n does not include the entire sample, n is given in parentheses.

Since women tend to have different college majors, it is possible that women's high GPAs are not helpful because they majored in traditional feminine fields while men majored in fields directly related to business. Business majors scored 155.4, not any differently that those majoring in home economics, education, or other traditionally feminine majors (152.1). Those without any college scored significantly higher than those with some college, $F(1, 55) = 3.82$, $p=.056$. (In contrast, Wagner and Sternberg found a significant correlation ($r = .41$) between years of schooling beyond high school and tacit knowledge scores for the business managers in their sample.) Clearly for the managers in our sample, going to college (and especially studying business) is not the key to acquiring tacit business knowledge.

What relates to income? Incomes rise with age and men make more money, ($r = .409$, $p<.01$ and $r = .389$, $p<.01$ respectively). Also, the length of the primary mentoring relationship is related to income ($r = .458$, $p<.01$), but more so for men ($r = .511$, $p<.01$) than for women ($r = .233$, n.s.). Also, those who make more money are more satisfied with their jobs ($r = .264$, $p<.05$). For women, income is related to the number of mentors they have had ($r = .424$, $p<.05$). For men, money is negatively related to fathers' education ($r = -.332$, $p<.05$).
Who is most likely to mentor and to be mentored? Overall someone who feels competent on the job ($r = .336$, $p<.05$) and interpersonally competent ($r = .397$, $p<.05$) is more likely to mentor others. Women who are dissatisfied on job ($r = -.553$, $p<.05$) are more likely to mentor others. Men with less education are more likely to be mentored ($r = -.376$, $p<.05$). Men who make more money are more likely to be mentors ($r = .401$, $p<.05$). These results suggest that motivation for mentoring may differ by sex. If female mentors' motivation stems from dissatisfaction, the lessons they pass on to their proteges will probably differ substantially from those of male mentors. How proteges are chosen may also differ for men and women. Mentoring may be used as an informal way of helping men compensate for deficiencies in formal education.

Job Satisfaction? Overall, men are significantly more satisfied with their jobs than are women, $F(1, 53) = 4.24$, $p = .044$. For women, age and satisfaction are negatively correlated ($r = -.557$, $p<.01$). That is, older women are less satisfied. For men, there is no relationship between age and satisfaction ($r = .06$). Higher GPAs are associated with more satisfaction ($r = .531$, $p <0.5$ for men and $r = .451$ for women). Females who have had more mentors tend to be more satisfied ($r = .545$, $p<.1$). This last relationship may result from the fact that those who have had more mentors make significantly more money.

Marriage. Number of times married is negatively related to all the tacit knowledge factors (and in all cases, significantly so for women, but not for men). Women with higher GPAs have been married more times ($r = .563$, $p<.01$), while men with higher GPAs have been married fewer times ($r=-.134$, n.s.). The difference between these correlation coefficients is significant ($p<.05$).

The work reported here is very preliminary in nature, but raises some important issues and suggests future research. For men, our results look much like Wagner and Sternberg's. Contrary to our hypotheses, mentoring experiences

did not appear to affect tacit knowledge. The most interesting and suggestive results have to do with gender. Our sample size is small and may not represent general patterns, but suggest there can be some serious pitfalls in the mentoring relationships and that the processes involved are especially complex for women.

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